

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/000726

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> C09K11/59, 11/08, 11/62, 11/64, 11/66, 11/79, H01L33/00,  
H01S5/18, 5/323

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> C09K11/59, 11/08, 11/62, 11/64, 11/66, 11/79, H01L33/00,  
H01S5/18, 5/323

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2005
Kokai Jitsuyo Shinan Koho	1971-2005	Toroku Jitsuyo Shinan Koho	1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CAPLUS (STN), REGISTRY (STN)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/11214 A1 (PATENT TREUHAND GESELLSCHAFT FUER ELEKTRISCHE GLUEHLAMPEN MBH.), 07 December, 2002 (07.12.02), whole document, especially Claim 12 and examples & JP 2004-505470 A & US 2004/56256 A1 & EP 1305833 A	1-11
X	JP 2004-2512 A (Sumitomo Chemical Co., Ltd.), 08 January, 2004 (08.01.04), & US 2003/111643 A1 & EP 1321500 A2	1-11
X	JP 2003-313549 A (Sumitomo Chemical Co., Ltd.), 06 November, 2003 (06.11.03), (Family: none)	1-11



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

06 April, 2005 (06.04.05)

Date of mailing of the international search report

26 April, 2005 (26.04.05)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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International application No.

PCT/JP2005/000726

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2003-261868 A (National Institute of Advanced Industrial Science and Technology), 19 September, 2003 (19.09.03), (Family: none)	1-11
Y	JP 2004-501512 A (General Electric Co.), 15 January, 2004 (15.01.04), & US 6621211 B & EP 1332520 A & WO 01/89001 A2	1-11
Y	JP 2002-509978 A (Sarnoff Corp.), 02 April, 2002 (02.04.02), & US 6099754 A1 & EP 1070107 A & WO 99/50371 A1	1-11

The phosphors of claims 1-11 are defined in such a manner that those represented by a wide variety of composition formulae are comprehended, for example, most of the constituent elements thereof specified only by a metal valence.

However, only those containing Ba, Ca or Si as a base material are concretely described in the description, and others are not concretely described at all. Further, there is no concrete description with respect to the phosphors containing "M<sup>20</sup>, M<sup>11</sup>, M<sup>12</sup>" of the structural formula appearing in these claims. Consequently, with respect to these claims, only some of the claimed phosphors are supported by the description within the meaning of PCT Article 6 and disclosed within the meaning of PCT Article 5.

In claims 5 to 7, the crystal phase contained in the phosphor is described in terms of a parameter being an angular scope of five diffraction angles derived from "reference diffraction peak" and "Bragg angle of diffraction peak".

However, in the description, there is no theoretical explanation, etc. as to by what particular means the phosphor having the crystal phase of such an angular scope of diffraction angles can be produced, or as to by what means a crystal phase deviated from the angular scope would result.

Therefore, the invention of the phosphor having the crystal phase of this specified angular scope of diffraction angles cannot be recognized as being fully disclosed in the description within the meaning of PCT Article 5 nor as fully supported by the description within the meaning of PCT Article 6.

Accordingly, search has been made focusing on those concretely described as Examples in the description. That is, complete search has been made with respect to phosphors comprising at least one of Ba, Ca and Sr as a base material and comprising Eu and Mn as an activator, and optionally further comprising Zn or Mg as a base material.